Forward-looking Costs

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Agenda

- Public Policy Overview
- Why TELRIC/TSLRIC?
- Cost Principles & Practices
- Cost Models
- Conclusions

Public Policy Overview

- Goals
- Instruments
- Obstacles

Public Policy: Instruments

- Regulation/Social Control
  - Rate of Return Regulation (ROR)
  - Benchmark (Yardstick)
  - Incentive Regulation
  - No Regulation
- Anti-trust/Monopoly Policy

Incentive/Price Caps Regulation

- Competitive Entry Encouraged
- Limit Incumbent’s Prices
- Productivity Factor
Role of Competition

- Allocation of Resources
- Incentive for Efficiency
- Threat of Entry Discipline

Incentive for Efficiency
- Prices => costs
- Pressure to reduce costs
- Selection of more efficient firms
- Promote innovation
- Diminish regulatory imperfections

Competitive Policy Overview

- Institutional Advantage
  (Incumbent)
- Technology Advantage
  (Incumbent)
- Regulatory/Competitive Synergy

Institutional Advantage
- Institutionalized cross-subsidies
- Name recognition
- Established customer-base

Institutional Advantage
- Technology Advantage
- Regulatory/Competitive Synergy
- Competition substitutes
- Competition complements
- Regulation can distort

Agenda

- Public Policy Overview
- Why TELRIC/TSLRIC?

Why TELRIC/TSLRIC?

- Telecommunications Act 1996
  - Interconnection
  - Universal Service
  - Unbundled Network Elements (UNEs)
- Comports with Economic Principles?

Agenda

- Public Policy Overview
- Why TELRIC/TSLRIC?
- Cost Principles & Practices

Cost Principles & Practices

- Economic Concepts
- Cost Concepts
- Model Principles

Economic Concepts

- Long run versus Short run
- Economic Relationships
  - Economies of scale & scope
  - Substitution
  - Demand relationships

Cost Concepts

- Stand Alone Costs
- Average Incremental Costs
- Marginal Cost
- Incremental Cost
- Input Prices (and the ECPR)
- Forward-looking Costs
Model Principles
- Comports with theory
- Verifiable
- Transparent

Cost Models
- Methodological Issues
- Alternatives Estimates

Methodological Issues
- Forward-looking/Prospective
- Joint/Common Cost
- Capacity Cost
- Prices' Role
- Accounting vs. Economic
- Activity Based Costs

Alternatives Estimates
- Process/Engineering Models
- Econometric Models

Engineering Cost Models (USA)
- HAI (Hatfield) Model
- Benchmark Proxy Cost Model
- Hybrid Cost Proxy Model (FCC)

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- Cost Models
  - Overview
  - Applications

Cost Models: Overview

- "One-hoss shay"/Light bulb
  - Assumptions
    - Constant price
    - Constant output
    - Constant expenses
    - Certainty of life

Overview

- Asset Valuation
  - Price can only be determined if all costs -- including the depreciation-- are included

Depreciation

- Accounting Depreciation
  - Arbitrary cost allocation (over time)
  - Industry/regulators determine
  - Not an economic cost
  - Not equal to economic depreciation

Depreciation

- Accounting depreciation
  - Used for prices/rates
  - Regulatory Compact
    - Payments cover costs
    - Investment plus return
Deprecation

- Accounting Deprecation
- Economic Deprecation
  - Determinates
    - Rental market
    - Secondhand markets
    - Profit generated
    - "Lemons" problem
    - Real options valuation
  - Sunk/Irreversible Costs
    - No rental or secondhand markets
    - Telecommunications systems

Prices

- Competition:
  - Constraints future prices.
- Forward-looking cost:
  - Limits future prices

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Cost Model Applications

Module
- Quantity

Problem
- No demand elasticity
- No market share decrement
- No growth
- Constant output

Module
- Quantity

Problem
- No technological substitution
- No economies of scale/scope
- No factor price consideration
Cost Model Applications

Module
- Quantity
- Engineering...
- Expenses

Problem
- ... 
- Annualized
  (as proportion of investments)
- No labor/capital
  substitution
- Constant
  expenses

Cost Model Applications

Module
- Quantity
- Engineering...
- Expenses
- Depreciation

Problem
- Not economic,
  but accounting
- Schedule from
  Joint Board
- Certainty of life
- Non-economic
  calculation

Cost Model Applications

Module
- ... 
- Expenses
- Depreciation
- Rate-base,
  rate-of-
  return revenue
  requirement

Problem
- No dynamics
- One price
- No change in
  input or output
  prices
- Static discount/
  interest rate

Cost Model Applications

Module
- ... 
- ... 
- ROR
- Investment
  (determined)

Problem
- one time
  investment
- static factor
  prices
- light bulb model
- no economies of
  scale/scope ...

Cost Model Applications

Module
- Quantity
- ... 
- ROR
- Investment
  (determined)

Problem
- No price effects
- Revenue
  requirement level
- No competitive
  impacts
- No market share
  loss

Cost Model Applications (continued)

Module
- Quantity
- ... 
- ROR
- Investment
  (determined)

Problem
- ... 
- static discount
  rate
- constant capacity
- no differentiated
  risk
- no real options

Cost Model Applications

Module
- Quantity
- ... 
- Revenue
  requirement divided by
  quantity = price!

Problem
- No price effects
- Revenue
  requirement level
- No competitive
  impacts
- No market share
  loss
Summary/Conclusions

- Present Value Inadequate
- Cost Models Inadequate
- Cost Models Adaptable

Summary

- Present Value Inadequate
- Cost Models Inadequate

Summary/Conclusions

- Present Value Inadequate
  - No Dynamics
  - No Uncertainties
  - No Options Valuation

Summary

- Present Value Inadequate
  - Cost Models Inadequate
  - Inadequate Specifications:
    - No change in cost of asset
    - No risk of underutilization
    - Revenue requirement level
    - Utilization rate level
    - No real option valuation

Summary/Conclusions

- Present Value Inadequate
  - Cost Models Adaptable
  - Real Options applicable
  - Competitive markets emulated